



**Department of the Environment**

---

# ***Understanding and Moving to Implementation of the Bay TMDL: WIPs and Milestones***

---

Richard A. Eskin, Ph.D.  
Director, Science Services Administration

DECEMBER 8, 2009





# Maryland's Allocation Process (Overview)

- MD must allocate draft major basin loads to State's Bay segmentsheds\* by source sector for Phase 1 Watershed Implementation Plan (WIP)
- Identify Point Source (PS) and Nonpoint Source (NPS) target loads for each impaired segment drainage area:
  - set targets based on controllable loads per sector
  - assess equitable levels of effort
  - consider relative effectiveness of segmentsheds per change in DO
- Consider current regulations (ENR strategy, MS4 permit requirements, etc.)
- Report final allocations through web-based GIS

Per EPA  
allocation  
method

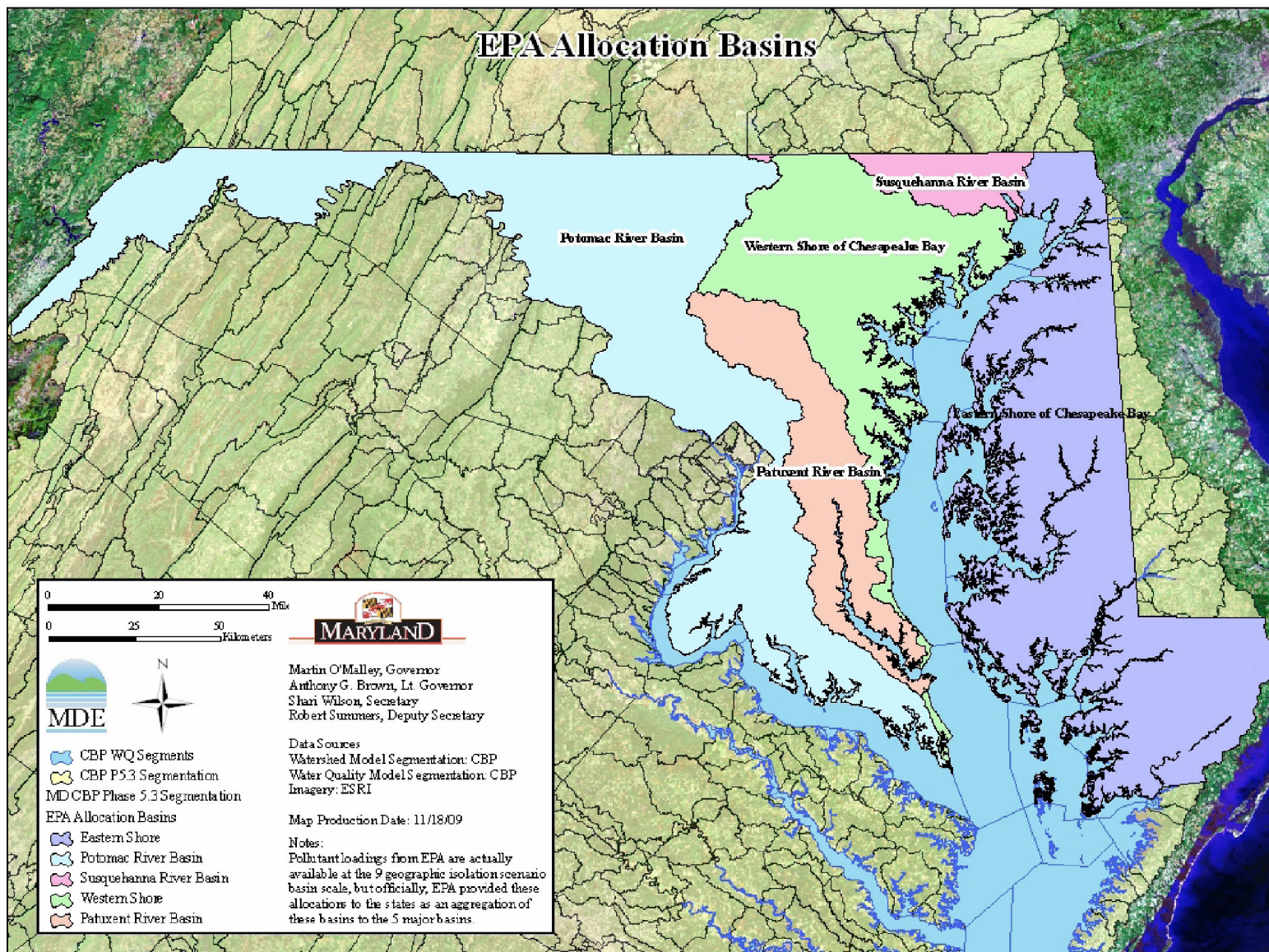
\*Specific geographic land area that drains to a Bay water quality segment







## 5 Maryland Major Basins Assigned Initial Nutrient Target Loads







**\*53 draining to MD Bay WQ segments (+ 5 draining to DC, VA & DE waters)**





## Preliminary Nitrogen and Phosphorus Working Target Loads for Maryland Major Basins

Maryland Major Basins	2008 N Load* (million lbs/yr)	N Target Load (million lbs/yr)	2008 P Load* (million lbs/yr)	P Target Load (million lbs/yr)
Susquehanna	1.2	0.8	0.05	0.05
Eastern Shore	19.0	12.8	1.14	1.24
Western Shore	15.0	10.2	0.79	0.62
Patuxent	3.5	3.2	0.28	0.24
Potomac	18.4	14.1	0.84	0.89
<b>MD TOTAL</b>	<b>57.1</b>	<b>41.0</b>	<b>3.09</b>	<b>3.04</b>

\* Draft 2008 Loads from Preliminary Implementation Scenario in 10/20/09 PSC Handout



# Maryland's Allocation Process (Stages)

---

Stage 1: Develop allocation method using Phase 5.2 watershed model and EPA allocation approach

Stage 2: Identify members and communicate responsibilities for PS and NPS Sector Teams

- PS Sector Team: check, confirm individual PS target loads
- Using [Phase 5.3](#), the allocation method, and confirmed PS estimates, subtract from total target load to estimate NPS target load for each segmentshed
- NPS Sector Team: review NPS target loads





## Maryland's Allocation Process (Stages) – cont'd.

---

### Stage 3: Source Sector Team discussions

- Identify loading gap closure options to finalize scenario that meets working target loads provided by EPA
- Meetings with local governments and stakeholders
- Finalize preliminary Phase 1 WIP (*due June 1, 2010*)

### Stage 4: Begin work on Phase 2 WIP

- Detailed implementation plan with specific controls at county/sector level



# Possible Source Sector Categories

---

## POINT SOURCES

- Major WWTP (individual)
- Minor WWTP (aggregate)
- Major Industrial (individual)
- Minor Industrial (aggregate)
- Dredged material placement sites
- CAFOs
- Construction
- Regulated urban stormwater
- Mines (sediment impacts)

## NONPOINT SOURCES

- Agriculture
- Septics
- Forest
- Harvested forest
- Non-regulated urban stormwater





## ***WIP Development: Eight Required Elements (per EPA Nov. 4 Letter)***

---

1. Interim (2017) and Final (2025) Nutrient and Sediment Target Loads (by major basin in each State)
2. Current Loading Baseline and Program Capacity
3. Account for Growth and Development anticipated 2011-2025
4. Gap Analysis
5. Commitment and Strategy to Fill Gaps
6. Tracking and Reporting Protocols
7. Contingencies for Slow or Incomplete Implementation
8. Appendix with Detailed Targets and Schedule:

***SEE NEXT SLIDE!***



## ***WIP Development: Required Elements (continued)***

---

8. Appendix with Detailed Targets and Schedule:
  - a. Interim and final load targets by **segmentshed and source sector**--and identify amount and location of loads from individual or, as necessary, aggregate point sources – *EPA will use in determining WLAs and LAs for Bay TMDL*
  - b. Reduction schedule comprising **2-year milestone target loads** at the scale of each major basin within the State – *EPA will use to assess if milestones are on schedule to meet interim and final goals*
  - c. **November 2011 Update (Phase 2): Loads divided by local area (co-seg) and controls to meet 2017 interim target load (as well as specific 2-year milestone commitments)**





- Bay Water Quality Segmentsheds intersected by Local Jurisdiction boundaries
- Draft due June 1, 2011
- Final due Nov. 1, 2011



## EXAMPLE:

Patuxent  
Tidal  
Fresh  
(PAXTF)  
Segment  
Drainage  
Area with  
counties  
delineated

12







## 2-Year Milestones: A New Approach

### *MD's Accelerated Nitrogen and Phosphorous Goals*

- Short-term two year “milestones” based on increasing 1985-2007 rate of implementation to achieve what is needed by 2020.
  - Overall Nitrogen Reduction by 2020:  
**15.95 M lbs = (1.25 M lbs/yr)**
  - Overall Phosphorous Reduction by 2020:  
**840,000 lbs = (64,615 lbs/yr)**
- Explicit commitments, contingency plans
- Will become part of Bay TMDL WIPs





## 2011 Urban Milestones

---

- ENR: Reduce **N** 740,000 lbs/yr, **P** 39,000 lbs/yr
- Blue Plains BNR upgrade: 190,000 lbs/yr
- Stormwater Management Retrofits: 90,000 acres
- Required septic retrofits in Critical Area: 1,080 systems
- Voluntary septic retrofits (outside of Critical Area): 1,920 systems
- Maryland Healthy Air Act: Reduce **N** 305,800 lbs/yr



# 2011 Non-Urban Milestones

---

- **Agriculture**

- Cover crops: 460,000 acres/yr
- NMP enforcement: 100,000 acres
- Soil Conservation and Water Quality Plans: 257,000 acres
- Manure Transport: 10,000 tons/yr

- **Natural Filters**

- Grass and forest buffers: 13,000 acres
- Wetland Restoration: 1,700 acres





## ***Bay TMDL and WIP Schedule***

---

**November 2009**      Basin-jurisdiction target loads

**December 2009**      Preliminary EPA Public Meetings

- Tuesday, Dec. 8 – 2:30-4:30 PM – MDE

- Friday, Dec. 11 – 1:30-3:30 PM – Chesapeake College

**June 1, 2010**      Preliminary Phase 1 Watershed  
Implementation Plans

**August 1, 2010**      Draft Phase 1 Watershed  
Implementation Plans



# ***TMDL/WIP Schedule, continued***

**August 15-October 15, 2010**

**Public Comment Period** for Draft Bay TMDL and  
Draft Watershed Implementation Plans

**December 31, 2010**

Final TMDL and Phase 1 WIPs Approved

**June 1, 2011**

Draft Phase 2 WIPs with Local Allocations  
and Specific Controls

**November 1, 2011**

Final Phase 2 WIPs



# **Maryland Department of the Environment**

**Science Services Administration  
Richard A. Eskin, Ph.D., Director**

**Tom Thornton, TMDL Review Coordinator  
TMDL Technical Development Program  
410-537-3656  
tthornton@mde.state.md.us**

